

UNITED STATES INTERNATIONAL TRADE COMMISSION  
WASHINGTON, D.C. 20436

\_\_\_\_\_  
In the Matter of )

CERTAIN VIDEO GRAPHICS )  
DISPLAY CONTROLLERS AND )  
PRODUCTS CONTAINING SAME )  
\_\_\_\_\_) )

Investigation No. 337-TA- \_\_\_\_\_

COMPLAINT UNDER SECTION 337 OF  
THE TARIFF ACT OF 1930, AS AMENDED

Complainant:

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Fremont, CA 94538  
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Proposed Respondent:

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## COMPLAINT

### I. INTRODUCTION

1. This Complaint is filed by Cirrus Logic, Inc. ("Cirrus") pursuant to Section 337 of the Tariff Act of 1930, as amended, 19 U.S.C. § 1337 ("Section 337"), based upon the unlawful importation into the United States, the sale for importation into the United States, and the sale within the United States after importation by the proposed Respondent ATI Technologies, Inc. ("ATI") of certain video graphics display controllers and video graphics display cards and other products containing such controllers that infringe one or more of claims 37 and 43 of United States Patent No. 5,598,525 ("the '525 Patent"). Cirrus is the exclusive owner by assignment of the '525 Patent and seeks as relief: (1) an order permanently excluding ATI's infringing video graphics display controllers and all products containing such infringing display controllers imported by ATI and others from entry into the United States; (2) a cease-and-desist order halting the sale of such infringing, imported display controllers and products containing such infringing display controllers; and (3) such other and further relief as the Commission deems just and proper.

### II. COMPLAINANT -- CIRRUS LOGIC, INC.

2. Cirrus is a corporation incorporated under the laws of the State of California, with its principal place of business at 3100 West Warren Avenue, Fremont, California 94538.

3. Founded in 1984, Cirrus designs, develops, manufactures, and markets leading-edge integrated circuits ("ICs") and related software for desktop and portable computing, telecommunications, and consumer electronics markets. Cirrus' portfolio of products and technologies spans multimedia (including graphics, video, and audio functions), wireless and wireline communications, magnetic hard disk and CD-ROM storage, and data acquisition applications. In fiscal year 1998, Cirrus had net revenue of over \$950 million. Attached as Complaint Exhibit 1 is a news release, dated April 22, 1998, announcing Cirrus' fiscal year 1998 results. Attached as Complaint Exhibit 2 is an excerpt from Cirrus' 1997 Annual Report providing an overview of the company.

4. Cirrus offers a full range of multimedia IC products, from basic graphics display controllers to state-of-the-art two-dimensional ("2D") and three-dimensional ("3D") controllers. Cirrus' controllers bring real-time video processing and video editing to personal computers, enabling video conferencing, interactive education, and video authoring. The primary customers for Cirrus' display controllers are add-in board manufacturers, portable (notebook) computer manufacturers, and other personal computer manufacturers.

### III. PROPOSED RESPONDENT -- ATI TECHNOLOGIES, INC.

5. Cirrus is informed and believes that Proposed Respondent ATI is incorporated and existing under the laws of Ontario, Canada. ATI's principal headquarters is in the city of Thornhill in Ontario, Canada.

6. Cirrus is informed and believes that ATI develops, manufactures, and markets video graphics display controllers and video graphics display cards, as well as multimedia software and hardware for the worldwide personal computer and Macintosh markets. Cirrus is further informed and believes that ATI imports into the United States for sale video graphics display controllers (including video graphics display cards containing these controllers) that infringe the '525 Patent, offers these products for sale or sells them for importation into the United States, and sells the infringing products within the United States. As discussed below, Cirrus is informed and believes that ATI is manufacturing and assembling its infringing products at manufacturing facilities located outside the United States. The discussion below and accompanying exhibits demonstrate that these infringing products are imported into the United States or sold for importation into the United States.

#### IV. THE PRODUCTS AT ISSUE

7. The products at issue are computer components called video graphics display controllers and other products in which these controllers are utilized. The display controllers consist of single, very large-scale, integrated circuit chips capable of performing the complex functions required for processing

video and graphics data.<sup>1</sup> These chips are usually included in add-in cards that an end user can plug into a computer system, thereby increasing the system's video and graphics processing capability. A single display controller chip is normally included in each add-in card and operates as the video graphics processing engine for the card, and ultimately for the system in which the card is installed. These display controllers allow a computer user simultaneously to manipulate video data and graphics data on a single computer screen, also known as "windowing." They also allow for accelerated graphics performance, full-motion video playback, and three-dimensional display.

8. One of the challenges facing companies designing and manufacturing video graphics display controllers is that video data is constantly updated, while graphics data is relatively static. Effectively overlaying graphics data with video data requires that the static graphics data not be destroyed by the video overlay. The inherent formatting differences between video data (normally YUV format with the information represented in terms of intensity and color) and graphics data (normally RGB format with the information represented by red, green, and blue pixel data) presents issues when the two are processed together. The '525 Patent addresses these challenges by allowing for the efficient processing

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<sup>1</sup> In a computer system, visual display data can be either video or graphics. Video is normally associated with moving pictures such as would be recorded by a television camera.

(Footnote continues on following page.)

of video and graphics data by a single IC display controller that accesses a multi-format frame buffer. The '525 Patent allows for efficient processing of video or graphics data retrieved from the frame buffer by providing parallel pipelines for processing and converting these distinct data types. Thus, the '525 Patent allows for the efficient manipulation of video and graphics data by a single controller utilizing a unified frame buffer.

9. Among the Cirrus video graphics display controllers practicing the '525 Patent are the Visual Media® family of products, including the CL-GD5446, Laguna CL-GD546X, CL-GD5480, CL-GD7548, CL-GD7555, and CL-GD7556. Submitted as Complaint Exhibit 3 are pages from Cirrus' Internet site listing and describing Visual Media® products. These products are designed, developed, and tested in Cirrus facilities in California and Texas. All wafer fabrication is done at a Cirrus/IBM joint venture in Hopewell Junction, New York. Final product assembly<sup>2</sup> for products covered by the '525 Patent is performed by subcontractors in overseas facilities.

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(Footnote continued from previous page)

Graphics is normally associated with relatively static background images or pictures.

<sup>2</sup> Final product assembly in this context means the wafer with the circuits for many copies of the product is cut into dies (each die is one product covered by the '525 Patent), each die has power ground/input/output pads which are attached to an interconnect medium such as leads or balls, and then the assembly is placed into a protective housing such as a plastic or ceramic package.

10. ATI claims that it is "one of the world's leading designers and manufacturers of affordable, high-quality graphics and multimedia products for the PC." (ATI 1997 Annual Information Form, February 25, 1997, p. 3, attached as Complaint Exhibit 4.) ATI further claims that its component and board-level graphics display controllers represent the company's main product line. (*Id.*) Cirrus is informed and believes that the video graphics processing engine for most of ATI's board-level 3D video graphics display products is the 3D Rage Pro video graphics controller. The 3D Rage Pro is related to the 3D Rage II, 3D Rage IIC, 3D Rage LT Pro, and the 3D Rage LT video graphics controllers, also manufactured and sold by ATI. As discussed more fully below, Cirrus is informed and believes that each of these controllers, and products incorporating these controllers, infringe one or more of claims 37 and 43 of the '525 Patent. Attached as Complaint Exhibit 5 are pages and diagrams from ATI's Internet site describing these chips and showing the similarity of their basic architecture.

## V. THE PATENT AT ISSUE

11. Cirrus is the exclusive owner by assignment of U.S. Patent No. 5,598,525, entitled "Apparatus, Systems and Methods for Controlling Graphics and Video Data in Multimedia Data Processing and Display Systems". A copy of the '525 Patent is attached as Complaint Exhibit 6. The '525 Patent issued on January 28, 1997, based on application No. 376,919 filed on January 23, 1995 by the inventors, Robert M. Nally and John C. Schafer. Mr. Nally and Mr.

Schafer have assigned all rights to this invention to Cirrus. A copy of this assignment, as duly filed with the United States Patent and Trademark Office, is attached as Complaint Exhibit 7.

12. A certified copy of the '525 Patent, and a certified copy and three additional copies of the Patent and Trademark Office file wrapper for the '525 Patent, accompany this Complaint as Appendix 1, together with four copies of each patent and each technical reference mentioned in the prosecution history of the '525 Patent.

13. The '525 Patent is valid and in full force and effect.

14. There are no foreign counterparts to the '525 Patent, and no foreign applications have been filed.

15. As discussed above, the '525 Patent represents a significant advance in graphics and video controller technology. The '525 Patent relates to specific integrated circuits known as video graphics display controllers, which the '525 Patent refers to as display controllers for graphics and video data. As noted above, video graphics display controllers control the simultaneous manipulation of video and graphics data on a single computer screen. The particular innovation described in the '525 Patent is a design that efficiently controls the occlusion, or overlay, of video and graphics data in a windowing environment. Specifically, the innovation of the '525 Patent is the ability to use a single, multi-format frame buffer capable of storing both graphics and video data. Prior technology required



either the use of two separate frame buffers (necessitating the added expense of two separate memories and imposing additional requirements on the video controller) or the conversion of the video data (which would degrade the quality of the video data). The invention taught by the '525 Patent overcomes these obstacles.

16. The '525 Patent has 47 claims. Claims 1, 13, 25, 34, 37, and 43 are independent claims. Claim 37 covers a display controller which comprises: (a) circuitry for selectively retrieving data from an associated multi-format frame buffer for simultaneously storing graphics and video data; (b) a first pipeline for processing words of graphics data selectively retrieved from said frame buffer; and (c) a second pipeline for processing words of video data selectively retrieved from said frame buffer. Claim 43 covers a display controller which comprises: (a) circuitry for selectively retrieving pixel data from on-screen or off-screen areas of a frame buffer; (b) a graphics backend pipeline for processing retrieved graphics data; (c) a video backend pipeline for processing retrieved video data; and (d) an output selector for selectively passing the data from the graphics pipeline or video pipeline to a display device.

17. Cirrus has licensed the '525 Patent to other major companies in the computer industry. Three copies of each current Cirrus licensing agreement covering the '525 Patent accompany this Complaint as Confidential Appendix 2.

VI. RESPONDENT'S INFRINGEMENT OF THE '525 PATENT

18. ATI's posted product descriptions for its video and graphics controller products describe combining graphics and video data on a single computer screen. Specifically, ATI represents that its 3D Rage II, 3D Rage Pro and 3D Rage LT chips provide PCs with superior 3D and 2D acceleration and motion video capabilities. A copy of ATI's product descriptions is attached as Complaint Exhibit 8.

19. Cirrus has obtained in the United States publicly available documents relating to ATI's products, including the 3D Rage Pro and the 3D Rage II graphics controller chips, and has analyzed these documents to ascertain whether the devices, as described in the literature, infringe the '525 Patent. Cirrus has also procured in the United States the following three samples of representative ATI video graphics display cards containing ATI's graphics controllers: the XPert@Play, the All-In-Wonder Pro, and the 3D Pro Turbo PC2TV display cards. Cirrus has analyzed these products to ascertain whether they infringe the '525 Patent. A detailed description of the analysis Cirrus performed on these products is set forth in the Declaration of Robert G. Wedig attached as Complaint Exhibit 9.

20. Cirrus' inspection and analysis of ATI's products and available documentation confirms that ATI's products referenced above infringe each element of one or more of claims 37 and 43 of the '525 Patent. A claim chart

indicating how these claims read on the infringing products is attached as Exhibit B to Mr. Wedig's declaration.

## VII. IMPORTATION

21. Cirrus is informed and believes that ATI is importing, selling for importation, and selling within the United States after importation video graphics display chips and cards that infringe the '525 Patent, including but not limited to claims 37 and 43, in violation of 19 U.S.C. § 1337(a)(1)(B)(i).

22. Cirrus is informed and believes that ATI manufactures infringing products, including the 3D Rage Pro, 3D Rage II, 3D Rage IIC, 3D Rage LT Pro, and 3D Rage LT controller chips and circuit cards containing those chips, at manufacturing facilities in at least Canada, Malta, Taiwan, Singapore, and China. Attached as Complaint Exhibit 10 are photocopies of three ATI display cards and their packaging showing that the on-board video graphics display controller chips were manufactured in Taiwan and Malta. Cirrus is further informed and believes that these infringing products are sold for importation into the United States and are imported into the United States by ATI for sale to customers. According to ATI's 1997 Annual Information Form, in 1996, ATI's sales in the United States represented 41% of its total sales; in 1995, this figure was 55%. (*See Complaint Exhibit 4, p.15.*)

23. Submitted with this Complaint are Physical Exhibits 1, 2, and 3, which are representative samples of ATI's display cards containing infringing

video graphics controllers that were imported into and sold in the United States, each of which is marked with its country of origin. Physical Exhibits 2 and 3 (respectively, the All-In-Wonder Pro and the 3D Pro Turbo PC2TV boards containing ATI's infringing Rage Pro and Rage II chips) were purchased on April 16, 1998, in Cupertino, California, and are the same cards analyzed by Mr. Wedig as discussed in Paragraph 19. A receipt evidencing the purchase of these cards is attached as Complaint Exhibit 11. Physical Exhibit 1 (the XPert@Play board) was purchased at the same location in the fall of 1997 and was analyzed by Mr. Wedig as set forth in Paragraph 19. Cirrus is informed and believes that ATI has imported and/or sold after importation such infringing products since 1996, and that ATI intends to continue to import and/or sell after importation such infringing products.

24. ATI's Internet site offers its products utilizing infringing display controller chips for sale in the United States. These products include the XPert 98, XPert@Play 98, XPert@Play, XPert@Work, XPert XL, All-In-Wonder, All-In-Wonder Pro, 3D Charger, 3D Pro Turbo PC2TV, 3D XPression+ PC2TV, and 3D XPression+. Pertinent pages from ATI's Internet site describing and offering these infringing products for sale in the United States are attached as Complaint Exhibit 12. In addition, ATI's 1997 Annual Report, attached as Complaint Exhibit 13, states that ATI's products are available at more than 600 retail locations in the United States.

25. In addition to board-level products, Cirrus is informed and believes that ATI is importing infringing video graphics display controller chips for incorporation into other manufacturers' products. Attached as Complaint Exhibit 14 are ATI news releases announcing the incorporation of ATI's Rage chips into various manufacturers' products. Cirrus believes that additional discovery will fully reveal ATI's importation of infringing video graphics display controller chips.

26. Infringing ATI video graphics display controllers and products containing those controllers are believed to fall within at least the following classifications of the Harmonized Tariff Schedules of the United States: 8471, et seq., for instance 8471.80.10 (other units of automatic data processing machines: control or adapter units) and 8471.80.40 (units suitable for physical incorporation into automatic data processing machines); 8473, et seq., for instance 8473.30.10 (parts and accessories of the machines under heading 8471: not incorporating a cathode ray tube: printed circuit assemblies); 8542, et seq., for instance 8542.12.00 (monolithic digital integrated circuits: cards incorporating electronic integrated circuits) and 8542.13.80 (monolithic digital integrated circuits: other, including microprocessors, controllers etc.).

#### VIII. RELATED LITIGATION

27. Cirrus is not aware of any past or present administrative or court litigation in the United States or in any foreign venue relating to the '525 Patent.

**IX. DOMESTIC INDUSTRY**

28. A domestic industry exists in the United States with respect to articles covered by the '525 Patent by virtue of Cirrus' extensive activities in the United States. Cirrus has made substantial investment in its exploitation of the '525 Patent through engineering, research, and product development. Cirrus has also made significant investment in plant and equipment and employs a significant amount of labor and capital in the United States for the manufacture, design, development, testing, marketing, quality control, and servicing of video graphics display controllers and cards embodying the '525 Patent. Cirrus has also engaged in domestic licensing of the '525 Patent.

29. Cirrus has produced and marketed graphics and video products incorporating the technology covered by the '525 Patent, including the CL-GD5446, Laguna CL-GD546X, CL-GD5480, CL-GD7548, CL-GD7555, and CL-GD7556. Confidential Exhibit 15 is a claim chart showing how representative claims 37 and 43 of the '525 Patent read on a representative product line, the Laguna CL-GD546X. Attached as Confidential Exhibit 16 is an overview of the Laguna chip architecture and accompanying functional diagrams from which the claim chart in Confidential Exhibit 15 is derived.

30. As detailed in Confidential Exhibit 17, Cirrus has realized and continues to realize significant revenue from products covered by the '525 Patent.

As shown in this exhibit, a large portion of the revenue is attributed to U.S. customers.

31. The domestic industry includes Cirrus' research, development, design, engineering, manufacturing, testing, quality control, distribution, sales, and customer support operations in the United States. Confidential Exhibit 17 shows Cirrus' significant investment in research and development, sales and marketing, test equipment, and manufacturing facilities and equipment in the United States.

32. Cirrus' engineering, research, and development activities are conducted at Cirrus' principal place of business in Fremont, California, as well as in the following locations: Greenville, South Carolina; Austin, Texas; and Plano, Texas. Cirrus has made and is making substantial ongoing investments in products incorporating the technology covered by the '525 Patent. Confidential Exhibit 17 details Cirrus' research and development expenditures associated with the '525 Patent and products incorporating the '525 Patent.

33. All wafer fabrication for the covered products is performed at MiCRUS, a wafer manufacturing joint venture between Cirrus and IBM located in Hopewell Junction, New York. MiCRUS is a 200,000 square-foot state-of-the-art production facility. The MiCRUS facility is ISO-9002 certified and includes a Class 10 cleanroom. Attached as Complaint Exhibit 18 are pages from the MiCRUS Internet site describing the MiCRUS joint venture. Confidential Exhibit 17 sets forth Cirrus' significant investment in the MiCRUS facility. A

patent licensing agreement related to the MiCRUS facility is included in Confidential Appendix 2.

34. All product quality testing for the covered products is currently performed in the United States either in Cirrus' Fremont, California headquarters or at the MiCRUS joint venture.

35. Confidential Exhibit 17 shows Cirrus' significant investment in domestic labor associated with the development and production of products incorporating the '525 Patent.

36. In addition to Cirrus' own exploitation of the '525 Patent's technology, Cirrus is actively pursuing potential licensees for the '525 Patent. As indicated in Paragraph 17, Cirrus has already licensed the '525 Patent to major companies in the computer industry and will continue to do so as opportunities arise.

#### **X. RELIEF**

WHEREFORE, by reason of the foregoing, Cirrus requests that the United States International Trade Commission:

a) Institute an immediate investigation pursuant to Section 337 of the Tariff Act of 1930, as amended, 19 U.S.C. § 1337, with respect to violations of that section based upon the unlawful importation into the United States, the sale for importation into the United States or the sale within the United States after importation by proposed Respondent and others of video graphics display



controllers and products containing same that infringe one or more of claims 37 and 43 of the valid and enforceable United States Patent No. 5,598,525;

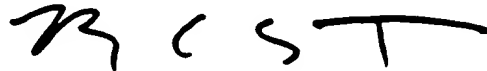
b) Schedule and conduct a hearing on said unlawful acts and, following said hearing;

c) Issue a permanent exclusion order pursuant to Section 337(d) of the Tariff Act of 1930, as amended, excluding from entry into and sale within the United States all video graphics display controllers that are manufactured, imported, or sold by or on behalf of ATI, its affiliates, subsidiaries, successors, or assigns, and products containing same, which infringe one or more of claims 37 and 43 of United States Patent No. 5,598,525;

d) Issue a permanent cease-and-desist order pursuant to Section 337(f) of the Tariff Act of 1930, as amended, prohibiting ATI, its affiliates, subsidiaries, successors, or assigns, from marketing, demonstrating, distributing, offering for sale, selling, or otherwise transferring in the United States any video graphics display controllers or products containing such controllers which infringe one or more of claims 37 and 43 of United States Patent No. 5,598,525; and

e) Issue such other and further relief as the Commission deems just and proper based on the facts determined by the investigation and the authority of the Commission.

Respectfully submitted,



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*Attorneys for Complainant*

Dated: July 1, 1998

**VERIFICATION OF COMPLAINANT**  
**CIRRUS LOGIC, INC.**

I, Robert F. Donohue, am Vice President, Chief Legal Officer and General Counsel of Complainant Cirrus Logic, Inc. and am duly authorized to sign this Complaint on behalf of Cirrus Logic, Inc. I have read the Complaint and am aware of its contents. To the best of my knowledge, information and belief formed after inquiry reasonable under the circumstances, I hereby certify as follows:

1) The Complaint is not being presented for any improper purpose, such as to harass or to cause unnecessary delay or needless increase in the cost of the investigation;

2) The claims and other legal contentions in the Complaint are warranted by existing law or by a nonfrivolous argument for the extension, modification, or reversal of existing law or the establishment of new law; and

3) The allegations and other factual contentions in the Complaint have evidentiary support or, if specifically so identified, are likely to have evidentiary support after a reasonable opportunity for further investigation or discovery.

I declare under penalty of perjury under the laws of the United States that the foregoing is true and correct.

Dated: June 30, 1998



Robert F. Donohue

UNITED STATES INTERNATIONAL TRADE COMMISSION  
WASHINGTON, D.C. 20436

In the Matter of  
CERTAIN VIDEO GRAPHICS DISPLAY CONTROLLERS AND PRODUCTS  
CONTAINING SAME

EXHIBITS TO COMPLAINT  
UNDER SECTION 337 OF THE TARIFF ACT OF 1930, AS AMENDED

***EXHIBITS TO COMPLAINT***

<b><u>EXHIBIT NO.</u></b>	<b><u>DESCRIPTION</u></b>
1	Cirrus news release showing FY 98 figures
2	Cirrus 1997 Annual Report
3	Cirrus World Wide Web site describing Visual Media products
4	ATI Annual Information Form (2/25/97)
5	ATI World Wide Web site : pages and diagrams describing chips and showing similarity of their basic architecture
6	Copy of '525 patent
7	Copy of Assignment
8	ATI Product description
9*	Declaration of Robert G. Wedig *
10	Photocopies of ATI display showing chips were manufactured in Taiwan and Malta

11	Receipt evidencing purchase in U.S. of ATI infringing products
12	ATI World Wide Web site describing infringing products for sale in U.S.
13	ATI 1997 Annual Report
14	ATI News Releases announcing the incorporation of ATI Rage Chips into various products
15C	Claim Chart
16C	Laguna chip architecture and functional diagrams
17C	Cirrus Confidential Statistics
18	MiCRUS World Wide Web site

***\* EXHIBITS TO ROBERT G. WEDIG DECLARATION (#9)***

<b><u>EXHIBIT NO.</u></b>	<b><u>DESCRIPTION</u></b>
A	ATI World Wide Web documents
B	Claim Chart